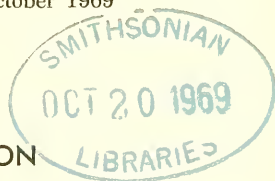


PROCEEDINGS  
OF THE  
BIOLOGICAL SOCIETY OF WASHINGTON



THE GENERA *STHENELANELLA* MOORE AND  
*EULEANIRA* HORST (POLYCHAETA, SIGALIONIDAE)

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In connection with a review of the genera in the polychaete family Sigalionidae, it was determined that *Euleanira* Horst (1916) should be referred to *Sthenelanelle* Moore (1910). Four species have heretofore been referred to the two genera. They include the following:

*Sthenelanelle* Moore, 1910: *S. uniformis* Moore, 1910. California.

*S. atypica* Berkeley and Berkeley, 1941. Southern California. Referred to *S. uniformis* (see below).

*S. polymorpha* Hartmann-Schröder, 1962. Chile. Not *Sthenelanelle* (see page 437).

*Euleanira* Horst, 1916: *E. ehlersi* Horst, 1916. Dutch East Indies. Referred to *Sthenelanelle* (see below).

Type-specimens of *S. uniformis* and *S. atypica*, deposited in the Smithsonian Institution (USNM), *E. ehlersi*, deposited in the Zoological Museum Amsterdam (ZMA) and Rijksmuseum Natural History Leiden (RNHL), were re-examined.

This study was aided in part by a grant from the National Science Foundation (GB-1269). For the loan of type-specimens, I wish to extend thanks to S. van der Spoel of the Zoological Museum Amsterdam and to J. van der Land of the Rijksmuseum Natural History Leiden. The manuscript benefited from the suggestions of M. L. Jones and J. L. Barnard, both of the Smithsonian Institution.

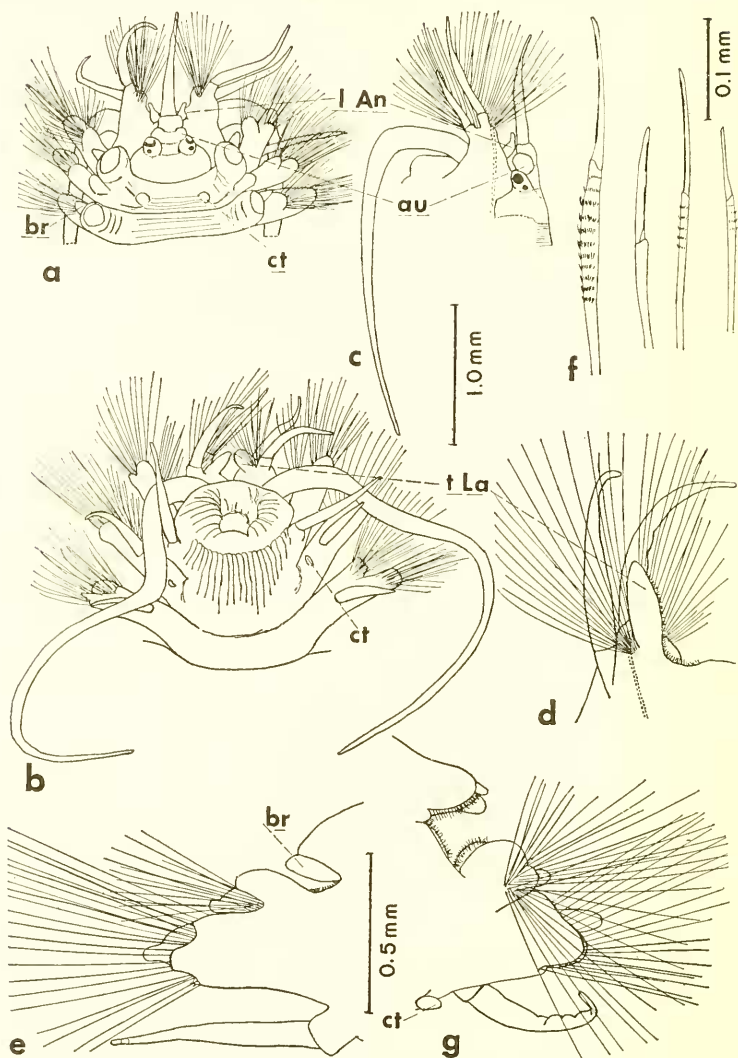


FIG. 1. *Sthenelanellela uniformis* (Syntypes of *S. atypica*, USNM 32849): a, Anterior end, dorsal view, elytra on segments II and IV removed; pharynx partially extended causing tentacular parapodia to be spread apart; posterior part of prostomium hidden by segment II; b, anterior end, ventral view; c, prostomium and tentacular parapodium, lateral view; d, tentacular parapodium, inner view, showing tentacular lamella; e, parapodium from segment II, posterior view; f, neurosetae from same; g, parapodium from segment III, anterior view. (au, auricle; br, branchia; ct, ctenidia; l An, lateral antenna; t La, tentacular lamella).

## FAMILY SIGALIONIDAE

Genus *Sthenelanelle* Moore, 1910

*Type-species*: *S. uniformis* Moore, 1910, by monotypy. Gender: feminine. Synonym: *Euleanira* Horst, 1916. *Type-species*: *E. ehlersi* Horst, 1916, by monotypy. Gender: feminine.

*Diagnosis*: Body slender, depressed, with segments up to 75. Elytra numerous pairs, arranged on segments 2, 4, 5, 7, then alternate segments to 25 or 27, then continuing on all segments to end of body. Branchiae short, conical, lateral to dorsal tubercles or elytophores from segment II on. Without dorsal cirri. Prostomium rounded, fused with tentacular segment (I); ceratophore of median antenna with lateral auricles and short style; lateral antennae very short, fused to tentacular parapodia; palps long, slender, tapered, emerging lateral to tentacular parapodia, without palp sheaths; 2 pairs eyes on raised ocular areas lateral to ceratophore of median antenna; tentacular parapodia uniramous, extending anteriorly medial to palps, each with single aciculum, 2 tentacular cirri, well-developed fan-shaped bundles of capillary setae, and medial tentacular lamella. Parapodia of segments II-IV directed anteriorly; buccal segment (II) with ventral buccal cirri longer than following ventral cirri. Parapodia biramous, with rami closely united, with notopodial ctenidia; without parapodial stylodes. Notopodia with conical acicular lobes and inflated rounded upper lobes; notosetae simple, capillary, spinous; beginning about segment 16, additional long threadlike notosetae formed from notopodial spinning glands. Neuropodia with rounded presetal and postsetal lobes. Neurosetae forming vertical bundles, all compound, with blades short, sickle- and rod-shaped; blades of neuropodia II-IV longer; some with spinous stems. Ventral cirri slender, tapered and subulate. Pharynx with 13 or more pairs distal papillae and 2 pairs interlocking teeth. Occupy long, tough, fibrous tubes.

*Sthenelanelle uniformis* Moore

## Figures 1-3

*Sthenelanelle uniformis* Moore, 1910, p. 391, pl. 33, figs. 105-112.—Hartman, 1939, p. 69, pl. 18, figs. 226-231; 1961, p. 54; 1968, p. 169, figs. 1-6.

*Sthenelanelle atypica* Berkeley and Berkeley, 1941, p. 26, pl. 5, figs. 1-3. *Stenelanelle* [sic] *uniformis*.—Reish, 1968, p. 72.

*Material examined*: CALIFORNIA, *Albatross* in 1904 (exact locality unknown)—Holotype *S. uniformis* (USNM 17385). SOUTHERN CALIFORNIA, G. E. MacGinitie, collector, off Corona del Mar, 22-31 meters; off Balboa—34 Syntypes *S. atypica* (USNM 3248-32850).

*Description*: As in generic diagnosis. Length up to 26 mm, width 2-3 mm, including parapodia, and 3-4 mm, including setae; segments up to 70. Elytra delicate, transparent, on all segments from segment 27 on; first elytral pair round, with fringe of short, crowded papillae on anterior margin; rest of elytra subreniform to oval, smooth or with scattered sensory

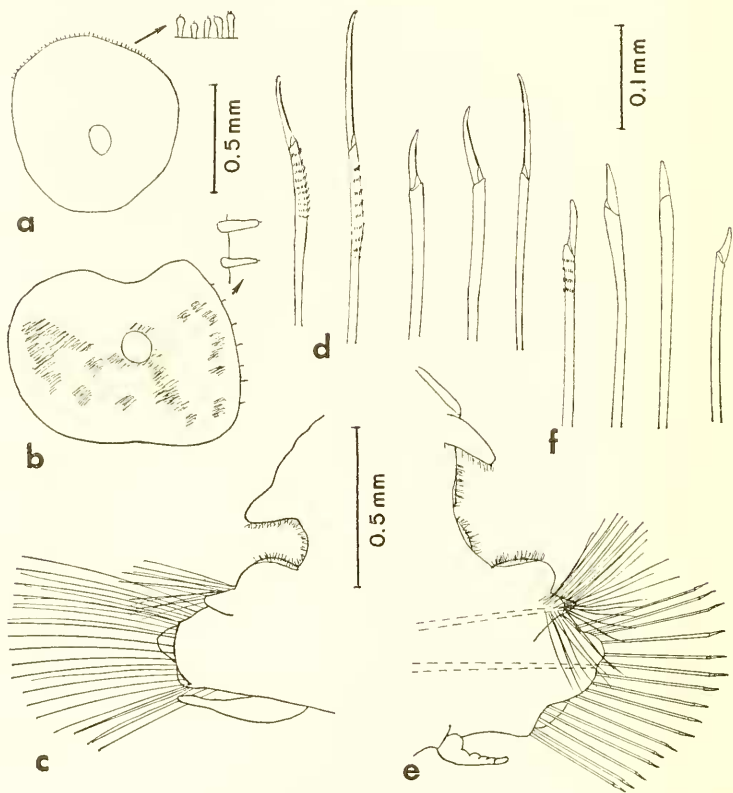


FIG. 2. *Sthenelanelle uniformis* (Syntypes of *S. atypica*, USNM 32849): a, First elytron; b, anterior elytron; c, parapodium from segment IV, posterior view; d, neurosetae from same; e, parapodium from anterior region (segment 13), anterior view; f, neurosetae from same.

papillae on lateral margin; anterior elytra with rust-colored mottled pigmentation (fig. 2a, b). Prostomium with posterior part hidden dorsally by segment II, with ceratophore of median antenna equipped with lateral auricles in middle of ceratophore; inflated ocular areas lateral to base of ceratophore with 2 pairs of eyes, the anterior pair larger than posterior pair; upper tentacular cirri subequal in length to median antenna; lower tentacular cirri shorter, subequal in length to ventral buccal cirri of segment II; lateral antennae short, subulate, on inner dorsal bases of tentacular parapodia; capillary setae finely spinous and smooth; ciliated elongate-conical tentacular lamellae medial to setal bundles (fig. 1a-d). Neurosetae of segments II-IV with distal stems with variable number spinous rows; blades elongate, slender, slightly hooked, with walls ir-

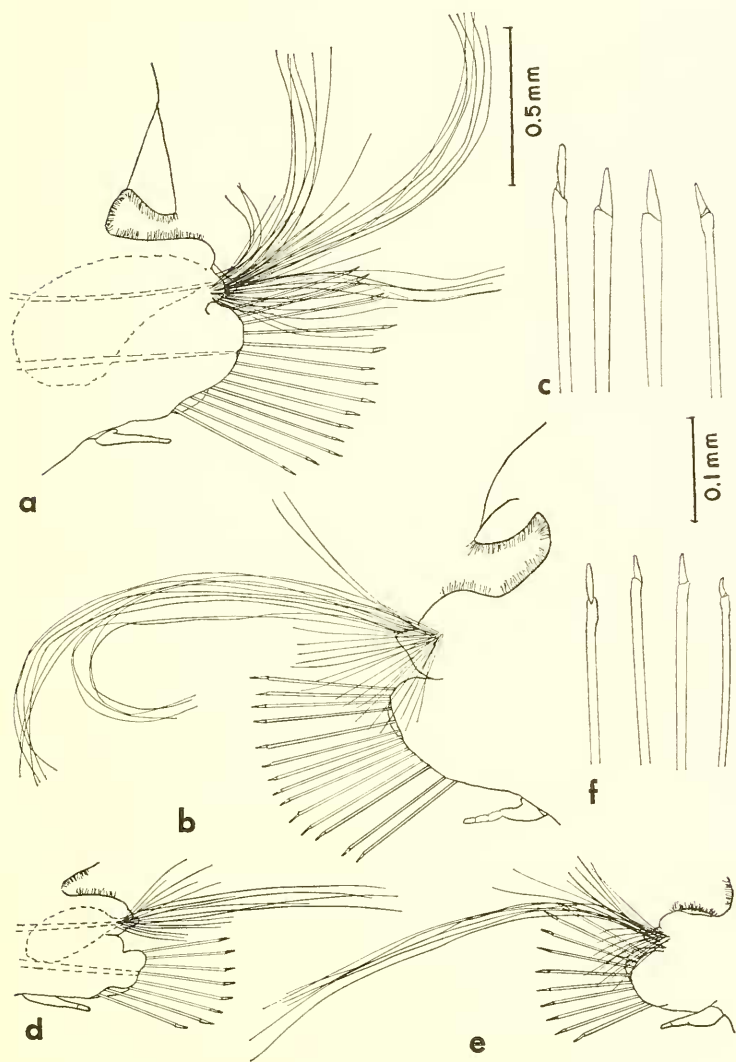


FIG. 3. *Sthenelanella uniformis* (Syntypes of *S. atypica*, USNM 32849): a, Middle parapodium, anterior view; position of notopodial spinning gland dotted in; b, middle parapodium, posterior view; c, neurosetae from same; d, posterior parapodium, anterior view; e, posterior parapodium, posterior view; f, neurosetae from same.

regularly thickened on inner sides (figs. 1f, 2d); segment III encroached upon by segments II and IV, without dorsal cirri but with conical dorsal tubercles and small branchiae; pair of small knobs or ctenidia dorsally, medial to dorsal tubercles between segments II and III; additional pair of ctenidia ventrally on segment III (fig. 1a, b, g).

Notopodia of parapodia forming conical acicular lobes and inflated rounded upper lobes with ciliated ctenidia; two additional ctenidia between notopodia and branchiae (figs. 2,e,f; 3a-f). Notosetae capillary, coarsely spinous, forming loose spreading bundles. Beginning on about segment 14, notopodia provided with large oval spinning glands from which slender threads emerge, extending far beyond the parapodia and eventually becoming incorporated in their fibrous tough tubes. Neuropodia diagonally truncate, with subequal rounded presetal and postsetal lobes; presetal lobes with slight acicular notch. Neurosetae with blades short; upper blades rod-shaped, rest conical, pointed. Ventral cirri short, subulate, with bulbous area on upper basal part and with terminal joint. Pharynx with 2 pairs chitinous teeth and 13 or more pairs papillae (13 + 13; 14 + 15; 13 + 15). Tubes much longer than worms, branched, with walls thick, tough, felted, covered with mud or sand (fig. 6, in Hartman, 1968).

*Distribution:* Southern California, Gulf of California to Ecuador. Littoral to 73 meters, in silty, sandy, and muddy bottoms.

*Remarks:* The feltage notosetae and spinning glands were overlooked by Moore (1910), but were observed by Hartman (1939) and the Berkeleys (1941). Hartman (1961) questionably referred *Sthenelanelia atypica* to *S. uniformis*. The species is very common at shelf and slope depths off southern California (Hartman, 1961).

***Sthenelanelia ehlersi* (Horst), new combination**

Figures 4, 5

*Euleanira ehlersi* Horst, 1916, p. 12, figs. 1, 2; 1917, p. 122, pl. 27, figs. 1-5.—Day, 1967, p. 101.

*Material examined:* *Siboga* station 2, Madura Strait, Dutch East Indies, 7° 25' S, 113° 16' E, 56 meters—2 Syntypes (ZMA 218); 1 Syntype (RNHL 1190).

*Description:* As in generic diagnosis. Length up to 25 mm, width 2.5 mm, including parapodia, and 3.5 mm, including setae; segments up to 75. Elytra delicate, transparent, on all segments from 25 on; first elytral pair round, with few scattered sensory papillae on outer border; rest of elytra subreniform to deeply sinuous on external border; anterior elytra with transverse bands of brown pigment (fig. 4a,g,h). Prostomium with ceratophore of median antenna equipped with lateral auricles on middle of ceratophore; inflated ocular areas lateral to base of ceratophore with 2 pairs of eyes, the anterior pair larger than posterior pair; median antenna and upper and lower tentacular cirri subequal in length; lateral antennae short, digitiform, on inner dorsal bases of tentacular parapodia and addi-



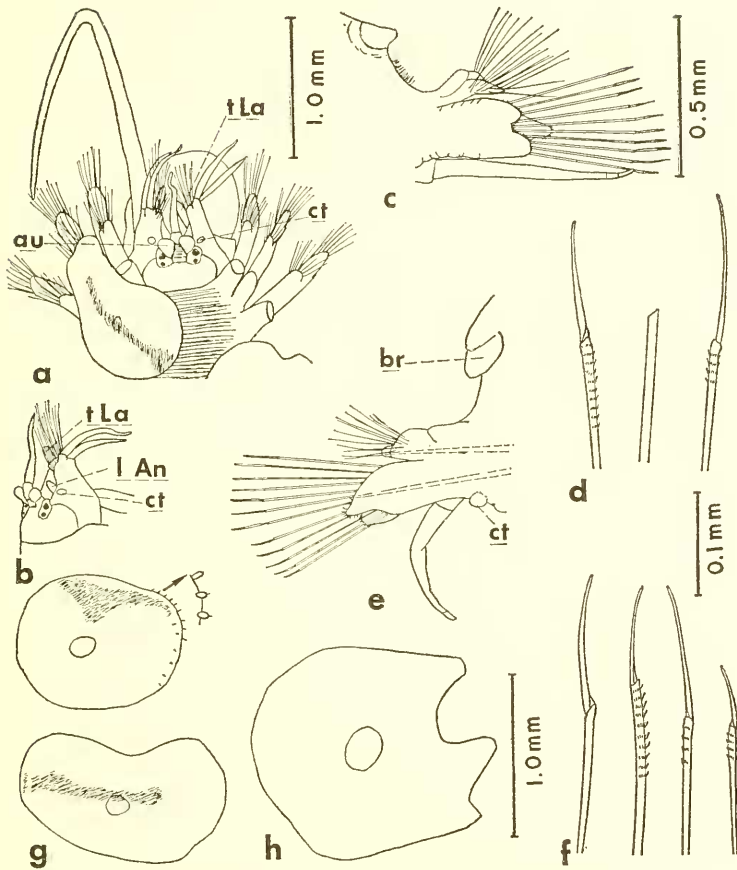


FIG. 4. *Sthenelanella ehlersi* (Syntype of *Euleanira ehlersi*, ZMA 218): a, Anterior end, dorsal view, pharynx partially extended; first left and first two right elytra removed; right palp missing; lateral antennae on inner dorsal sides of segment I hidden from view; b, prostomium and tentacular parapodium (I), lateral view; palp missing; c, parapodium of segment II, posterior view; d, upper, middle, and lower neurosetae from same (blade of middle ones missing); e, parapodium of segment III, anterior view; f, upper, middle and lower neurosetae from same; g, first two right elytra; h, middle right elytron. (au, auricle; br, branchia; ct, ctenidia; l An, lateral antenna; t La, tentacular lamella).

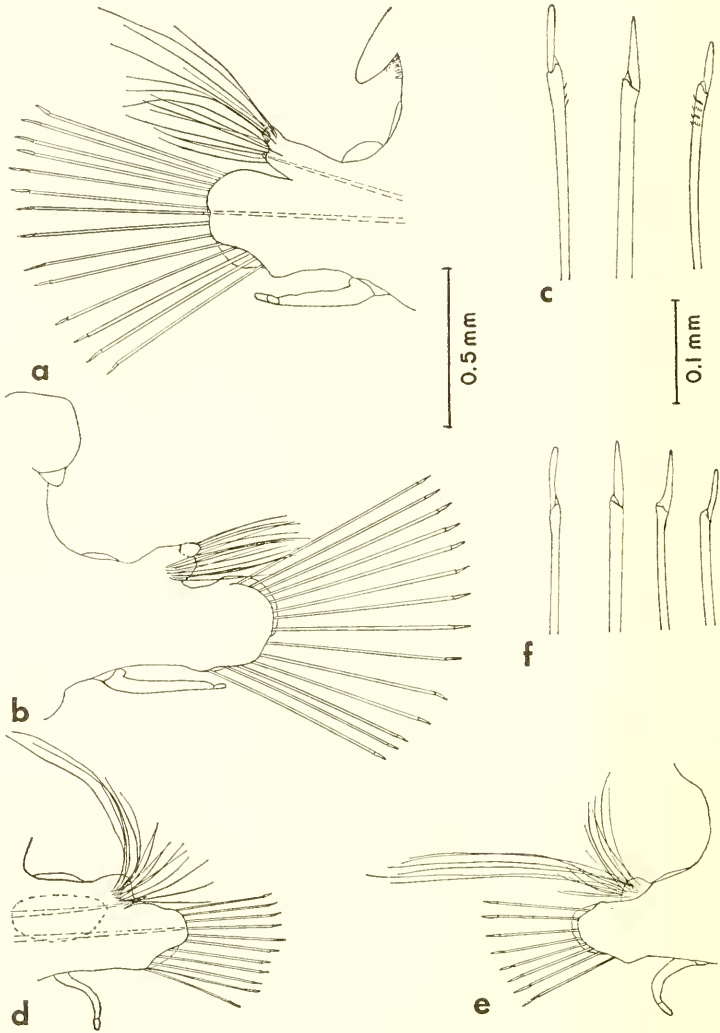


FIG. 5. *Sthenelanelle ehlersi* (Syntype of *Euleanira ehlersi*, ZMA 218): a, Middle parapodium, anterior view; b, same, posterior view; c, upper, middle and lower neurosetae from same; d, posterior parapodium, anterior view; position of spinning gland dotted in; e, posterior parapodium, posterior view; f, upper, middle and lower neurosetae from same.



tional small oval ctenidia on their dorsal bases; elongate-conical tentacular lamellae medial to setal bundles (fig. 4a, b). Neurosetae of segments II-IV with distal stems with variable number spinous rows or these lacking; blades elongate, slender, slightly hooked (fig. 4d, f); segment III without dorsal cirri but with conical dorsal tubercles and small branchiae; pair of small knobs or ctenidia ventrally (fig. 4e).

Notopodia of parapodia forming small rounded lobes with single prominent ctenidia and slight indication of additional ctenidia (fig. 5a, b, d, e). Notosetae capillary, finely spinous. Middle and posterior notopodia provided with oval spinning glands from which long fine threads emerge (fig. 5d, e). Neuropodia with rounded presetal and postsetal lobes, the presetal lobes somewhat narrower. Neurosetae with short blades; upper and lower blades rod-shaped; rest conical, pointed (fig. 5c, f). Ventral cirri short, subulate, with bulbous area on upper basal part and with terminal joint. Pharynx not extended and not examined. Tubes fibrous, stiffened with mud (Day, 1967).

*Distribution:* Dutch East Indies; South Africa (Natal). In 56 meters (shallow to deep—Day, 1967).

*Remarks:* The spinning glands and long feltage notosetae were overlooked by Horst (1916, 1917) but were observed by Day (1967), who found specimens encased in fibrous tubes stiffened with mud. Due to the opaque body, it is difficult to detect on which segment the spinning glands begin. Day (1967) indicated that the elytra occurred on all segments from 21 on, instead of segment 25, as observed on the Syntypes.

#### KEY TO THE SPECIES OF *STHENELANELLA*

1. Anterior elytra with mottled pigmentation (fig. 2b); middle and posterior elytra with external margins entire. Without oval ctenidia on dorsal bases of tentacular parapodia (I) (fig. 1a). With pair of oval ctenidia or knobs dorsally between segments II and III (fig. 1a) ..... *S. uniformis* Moore
- 1'. Anterior elytra transversely banded (fig. 4a, g); middle and posterior elytra with external margins deeply sinuous (fig. 4h). With pair of oval ctenidia on dorsal bases of tentacular parapodia (I) (fig. 4a, b). Without oval ctenidia or knobs dorsally between segments II and III (fig. 4a) ..... *S. ehlersi* (Horst)

Species of *Sthenelanella* are unique among the Sigalionidae in having notopodial spinning glands which form notopodial threads that contribute to their tough fibrous tubes, similar in this regard to some species of Polyodontidae. Their neurosetae—all compound, with short blades—sets them apart from most of the other species of Sigalionidae.

*Sthenelanella polymorpha* Hartmann-Schröder (1962), from Chile, does not agree with the above diagnosis of *Sthenelanella* in a number of characters, such as the relatively short palps, poorly developed tentacular parapodia, and the shape of the parapodial lobes which lack spinous capillary notosetae and spinning threads.

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